

What is claimed is:

1. A method of monitoring signal quality in a cable network comprising a headend connected by a cable network to a plurality of set-top boxes (STBs), the method comprising:
at selected ones of the STBs, monitoring and collecting information about signals received by the STB.
2. A method according to claim 1, wherein the information comprises at least one of channel absence/presence, error count and signal level estimates.
3. A method according to claim 1, wherein the cable network includes a downstream path for providing services/content to the STBs and an upstream path allowing the STBs to transmit information which has been collected to the headend.
4. A method according to claim 1, wherein the STB comprises an in-band (IB) tuner for receiving first signals from the headend, an out of band (OOB) tuner for receiving second signals from the headend, a monitor (MON) for generating the information about at least one of the first and second signals received by the STB, a controller (CONTROLLER) for controlling the overall operation of the STB, and non-volatile memory (NVM) for storing the information about the first and second signals received by the STB.
5. A method according to claim 4, wherein the STB maintains a channel map, further comprising:
when the STB is in an idle state, at the STB, tuning through the channels in the channel map and collecting the information about the first and second signals received by the STB including applying a time stamp to the information.

6. A method according to claim 5, further comprising:
upon reaching a last channel in the channel map, entering a sleep mode for a given period of time, at the end of which time the STB resumes monitoring signals received by the STB.
7. A method of monitoring statistics about cable transmissions on a cable network comprising a headend and a plurality of set-top boxes (STBs), the method comprising:
using at least one of the plurality of STBs, collecting statistics on plant health by monitoring signals on downstream and upstream paths, and reporting information related to the quality of these signals from the STB back to the headend.
8. A method according to claim 7, further comprising:
performing the monitoring function in the background when the STB is not being used.
9. A method according to claim 7, further comprising:
storing the statistics for future collection via a two way polling mechanism.
10. A method according to claim 7, further comprising:
transmitting the statistics from the STB to the headend as they are collected.
11. A method according to claim 7, wherein the cable network includes an out-of-band (OOB) control channel, and further comprising:
at the STB, monitoring of errors/dropouts on the OOB control channel.
12. A method according to claim 7, further comprising:
monitoring errors/dropouts on the downstream path.
13. A method according to claim 7, further comprising:
transmitting ping messages from the STB to the headend and back to the STB.

14. A method according to claim 7, further comprising:
monitoring the downstream path, by waiting until the STB is in an off state, then tuning each channel in a channel map.
15. A method according to claim 14, further comprising:
monitoring each channel's health for a period of time and logging this information with a timestamp.
16. A method according to claim 15, further comprising:
monitoring a channel's health by monitoring at least one of channel absence/presence, error count and signal level estimates.
17. A method according to claim 14, further comprising:
cycling through the channel map at some periodicity.
18. A method according to claim 7, further comprising:
monitoring the upstream path by transmitting a "ping" type signal from the STB to the headend.
19. A method according to claim 18, further comprising:
at the head-end, receiving the transmitted ping signal and returning it to the STB via the downstream path.
20. A method according to claim 19, wherein:
the return ping message comprises statistics about the signal that the headend received from the STB.

21. A method according to claim 20, wherein:
upon reception of the return ping message, the STB verifies functionality and records any appropriate signal statistics in its records.
22. A method according to claim 7, further comprising:
collecting information at the STB and transmitting it from the STB to the headend using a polling system.
23. A method according to claim 22, wherein:
the information is transmitted to the head end on the upstream path.
24. A method according to claim 7, wherein the headend queries the STB for a report of channel health monitoring statistics.
25. A method according to claim 7, wherein:
the cable network comprises nodes, and
there is at least one monitoring-enabled STB per node.
26. A method according to claim 25, wherein:
when there are several monitoring-enabled STBs per node, a portion of the STBs are enabled and a remaining portion of the STBs are quiescent.
27. A method according to claim 26, further comprising:
from the headend, turning off the monitoring function of a monitoring-enabled STB and turning on the monitoring function of a quiescent STB on the same node.
28. Apparatus for monitoring signal quality in a cable network comprising a headend connected by cable to a plurality of set-top boxes (STBs), wherein at least one of the STBs comprises:

in-band tuner means for receiving first signals from the cable operator;
out-of-band tuner means for receiving second signals from the cable operator;
monitor means for generating information related to signal quality;
controller means for controlling the overall operation of the STB; and
non-volatile memory means for storing the information generated by the monitor means.

29. Apparatus according to claim 28, further comprising:
means for transmitting the information from the STB to the headend as it is collected.
30. Apparatus according to claim 28, further comprising:
means for transmitting the information from the STB to the headend when the STB is
polled by the headend.